Part No. P0993475 02

Business Communications Manager 3.0

NetVision Phone Administrator Guide

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Chapter 1
Installing NetVision telephones

This document describes how to use the Nortel version of the NetVision Phone Administrator (NVPA) software to configure the features for Symbol* NetVision wireless IP telephone handsets.

You download this software from the Symbol web site and install it on your local computer. You must also obtain a special serial cable to connect between your computer and the handset to allow the configuration you create in the NVPA to pass to the handset, and for the handset information to pass to the NVPA. Refer to "Gathering system information before you start" on page 8 for Symbol website information.

NetVision connectivity

NetVision and NetVision Data wireless IP telephones connect to the Business Communications Manager over a LAN through the Business Communications Manager LAN or WAN card. The Business Communication Manager sees these telephones as IP telephones, which means that the DN records are assigned from the digital range rather than the Companion or ISDN range of DNs. The NetVision handsets use the default codecs set up for IP trunks.

Note: NetVision handsets experience communications problems if your system has NAT between the handset internet connection and the published address of the Business Communications Manager LAN. For this reason, this configuration is NOT supported.

From within the system, the handsets can make and receive calls from any trunk type supported by the system, which can include voice over IP (VoIP), digital and analog trunks. The handset DN record determines which lines the handset can access.

The handset can communicate with any other type of telephone supported by the Business Communications Manager system.

Access points

Instructions about installing the access point are provided with the access point equipment, which is sold and installed separately. The access point is set up with an identification code (ESS ID) which is entered into the handset either through a configuration download or manually through the dialpad, to allow the handset to access the system through that access point. All access points in the same system have the same ESS ID to facilitate the roaming feature.

Keycodes

Before setting up NetVision telephones, you must ensure that keycodes have been entered for sufficient numbers of IP telephones. For information on entering keycodes, see the *Keycode Installation Guide.*

Handset and call functions

Symbol supplies a handset user guide which describes the features on the NetVision handset and how to use them to perform basic functions.

The *Business Communications Manager NetVision Feature card* explains how to use the handset to access features on the Business Communications Manager system and provides some quick tips for basic call functions.

Gathering system information before you start

Ensure the following is complete, or the information is on hand before you start configuring your NetVision telephones:

1. You have obtained the Symbol NetVision serial cable, which is used to transfer configuration information between the computer, where the NVPA is installed, and the handset.	Purchase cable from Symbol at <http://symbol.com> (part number: 25-20528-01)
2. You have downloaded the Nortel NVPA to your computer. http://www.symbol.com/services/downloads/nvfirmware2.html or • Under the **Administrator Software** heading, click on the Nortel x.x.x.exe firmware link. * Uninstall the existing version of NVPA on your computer before you install any new versions of the tool.	Download the NetVision Phone Administrator software* **Note:** The screens shown in this document are from NVPA version 4.
3. You have obtained the IP address of the subnet gateway for the handset (Business Communications Manager IP address).	Default IP gateway field
4. You have obtained the subnet mask for the handset subnet, if required.	Subnet Mask field
5. You know the IP address of the Published LAN/WAN interface of the Business Communications Manager.	Node IP address field
6. You know the Name and Password that will be assigned to the handsets.	H.323 record and Nortel NVPA records
7. Decide which features you want to add to the handset menu. NVPA tool: Refer to "NetVision menu feature types" on page 19 if you want to change the default lists.	DTMF features/Index features Features tab
8. The access point is installed and you have obtained the ESS ID.	IEEE802 ESS field

9. You know the IP address for each handset.	Phone List tab
10. You know the version of firmware that you need to download to the handset. Some examples: • NetVision FH (2MB) phone - NF_FN_XXXXXX.BIN • Dataphone FH (2MB) phone - DF_FNW_XXXXXX.BIN • NetVision DS (11MB) phone - ND_FN_XXXXXX.BIN • Dataphone DS (11MB) phone - DD_FN_XXXXXX.BIN • NetVision II DS (11 Mbit) phone - QD_FH_XXXX.BIN where XXXXXX is the version number	Download tab, BIN File to download field

Identifying the handset to the system

The H.323 Terminals records are defined in the Unified Manager within the Business Communications Manager. The information you enter into these records identify the handsets to the Business Communications Manager system. Each handset is provided with a unique record. From the information contained in the records, the Business Communications Manager determines which handsets will be allowed to connect to the system. The Name and Password fields of this record and the NVPA record for the handset must be exactly the same or the handset will not be allowed to connect to the Business Communications Manager system.

Using the Nortel NVPA tool to configure handsets

Use the Nortel NVPA tool to create the configuration file for the handset to use to connect to the system and to identify itself to the Business Communications Manager. This tool includes a page for defining what features appear on the handset feature menu. For a description about how to define feature menu items, refer to Appendix A, “Configuring feature codes for NetVision,” on page 19.

The process for configuring an NVPA record and downloading it to the handset are included under these headings:

- “Configuring handsets” on page 10
- “Adding user records and features” on page 12
- “Identifying the handset to the Nortel NVPA tool” on page 14
- “Updating handset firmware” on page 15
- “Downloading configurations to the handset” on page 16

Before you start

Before you can accomplish this procedure you need to ensure that you have the PC-to-handset cable on hand, and that you have downloaded the latest NVPA application from the Symbol website. Refer to items 1 and 2 in "Gathering system information before you start" on page 8.

Configuring handsets

This procedure provides information about what must be entered into the application to ensure that the handsets work with the Business Communications Manager.

1 Open the NVPA application.

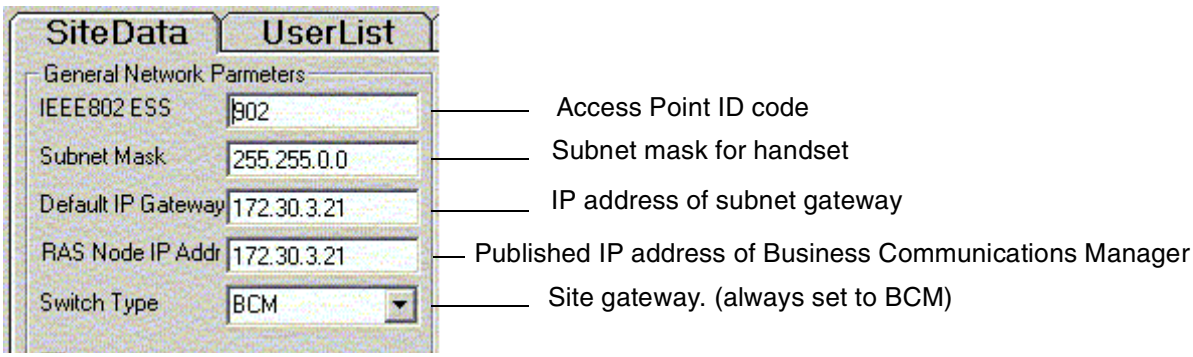
2 Ensure you select the correct site (**Active site**) or create a new site record.

3 Ensure the settings on the **Site Data** tab are correct. If not, make changes, as appropriate. Refer to the figures on the following pages.

Required settings:

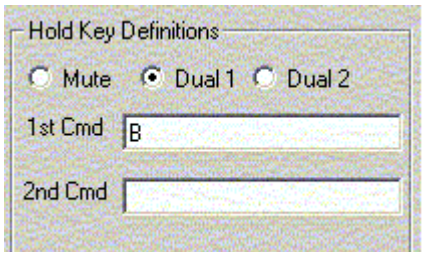
— **General** fields: Ensure the four fields indicated in the following figure have the correct parameters. The RAS node IP address is the Published IP address for your Business Communications Manager.

Figure 1 General required parameters



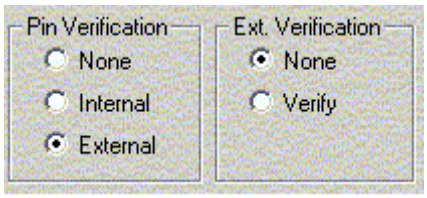
— In the **Hold Key Definitions** box, select **Dual 1**, and set 1st **Cmd** to **B**. Refer to the following figure.

Figure 2 Hold key programming



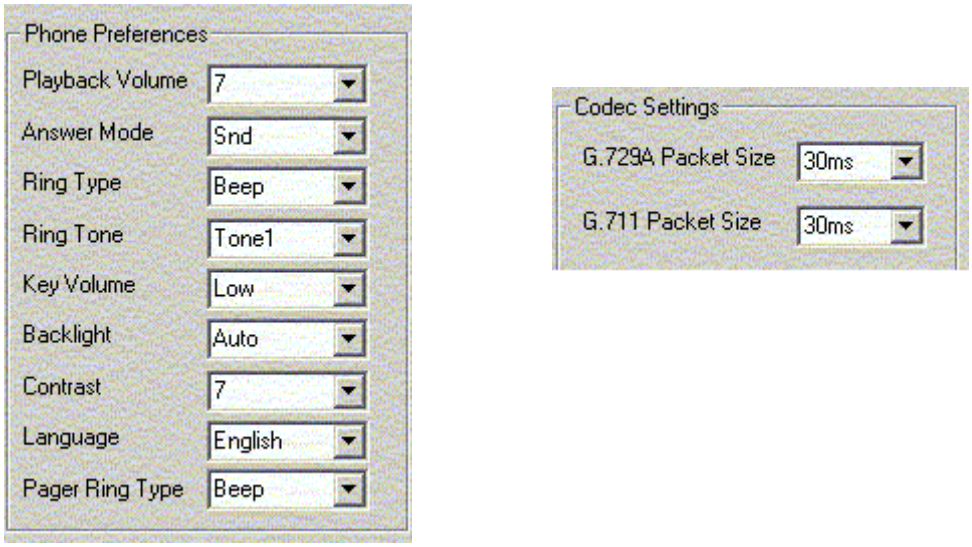
— In the **Pin Verification** box, select **External.** Refer to the following figure.

Figure 3 PIN verification



Optional features: The settings shown in the following figure are unique to your requirements. Change the defaults to suit your system requirements.

Figure 4 Optional settings



Inactive features: The information in the following boxes does not apply to Business Communications Manager programming, unless otherwise noted.

- Extended Services Protocol
- Short Messaging Services
- Airbeam Parameters
- Ext. Verification

4 Under the **Tools** menu, click **Import Features**.

Note: A new site defaults to the M1 feature set. Therefore, after you create a new site, change the switch type to **BCM**. Then select **Tools**, **Import Features** to update the features list (Features tab).

Adding user records and features

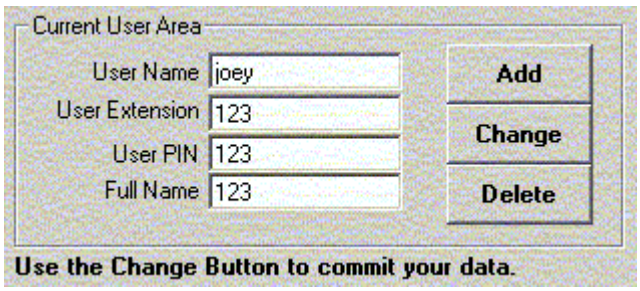
After you set up the Site Data parameters, enter user records for the handsets you are configuring, then define the features for each handset.

1 Click on the User List tab.

2 In the fields at the bottom of the screen, enter a record for each handset you are adding. Refer to the following figure.

Note: The information you enter for the **User Name**, **PIN** and **User Extension** must be the same as what you entered into the Unified Manager H.323 Terminals record **Name**, **Password** and **DN** fields.

Figure 5 Adding Users

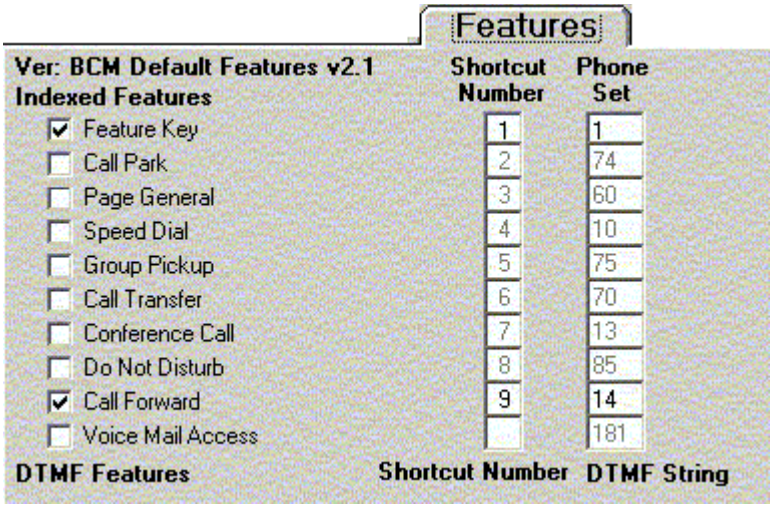


3 Click on the Features tab. Refer to the following figure.

4 In the fields on the Features page you will note that the Shortcut Numbers and Phone set field entries are filled out. These features are obtained from the default feature file that automatically loads when you choose the BCM switch type. Refer to "Indexed features" on page 19.

If any **DTMF features** are on the page, and are selected, enter the DTMF string for the feature in the **DTMF String** field if it is not already there. Refer to "DTMF features" on page 22.

Figure 6 NVPA default Features list



Note: These features must match Business Communications Manager capabilities.

Gateway Type, from the Site Data page, determines the default entries in this table.

For information about changing the list of Features on the Features tab, refer to Appendix A, "Configuring feature codes for NetVision," on page 19. This section also includes a description of the difference between Indexed features and DTMF features, and provides a list of supported features and their codes.

5 You are now ready to identify the handsets to the Nortel NVPA and to download the firmware and the configuration into the handsets. Refer to "Identifying the handset to the Nortel NVPA tool" on page 14.

Identifying the handset and downloading the record

After you add all the user files and feature information, you are ready to identify the handset to the Nortel NVPA tool, download the correct firmware, and, then, download the configuration file.

Identifying the handset to the Nortel NVPA tool

Follow these steps to identify the handset to the Nortel NVPA tool.

Note: For these procedures, the NVPA tool is running on your computer and the Download tab is selected.

1 Ensure the handset is turned off.

2 Attach the serial cable from your computer to the handset.

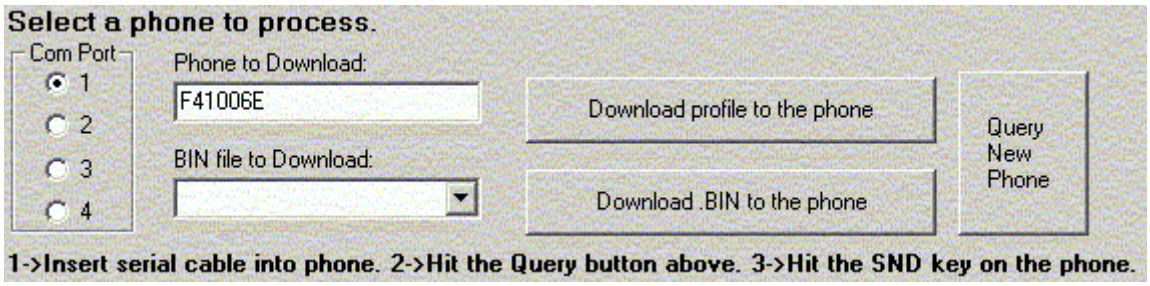
3 Turn the handset on.

4 On the NVPA Download screen, shown in the figure below, do the following:

a Ensure that the correct **Com Port** is selected.

b Click the **Query New Phone** button.

Figure 7 Connecting to a handset



5 Immediately press the key on the handset.

The application uploads identification data from the handset. The message line above the Com Port box will indicate the status of the process.

When the upload is complete, you will notice additional information entered into the Download tab and the Phone List tab fields.

6 Click the **Phone List** tab.

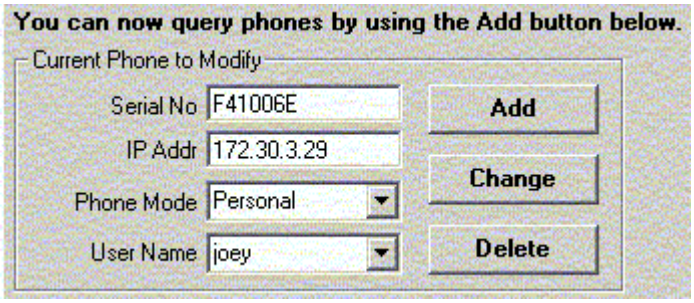
7 In the fields at the bottom of the window, enter the information that identifies the handset. Refer to the following figure.

a **IP address** for the handset.

b **Phone Mode** to **Personal**.

c **User Name** that matches the name you entered in the **H.323 Terminals** record in the Unified Manager.

Figure 8 Checking the Phone List entry for the handset



8 Click **Change** to save any updates.

9 Continue with the next section.

Updating handset firmware

Use this procedure to update firmware on your new NetVision handsets.

1 Unplug the serial cable from the handset.

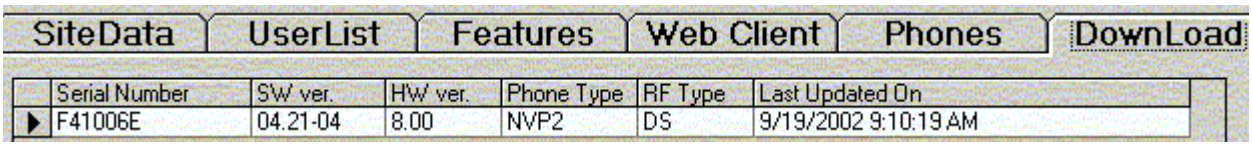
2 Turn the handset off. (Press and hold .)

3 Attach the serial cable from your computer to the handset.

4 On the Nortel NVPA application, do the following:

a Click the **Download** tab. Refer to the following figure.

Figure 9 Selecting a handset for firmware download

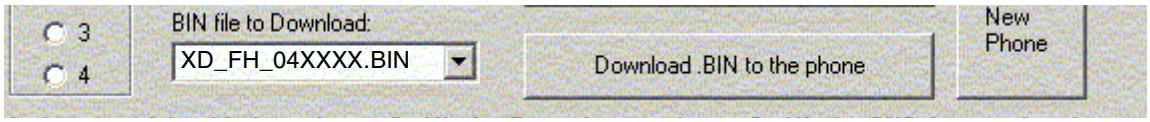


b Select the listing for the handset at the top of the screen or click the **Query New Phone** button at the bottom of the screen.

c At the bottom of the screen, in the **BIN file to Download** field, select the new firmware file.

In the following figure, this is XD_FH_04XXXX.BIN.

Figure 10 Downloading new firmware to a handset



5 Set up the handset, press and hold the 1 and * keys. At the same time, press and momentarily hold .

Note: For detailed descriptions about using the handset menus and troubleshooting error messages, refer to the *NetVision Phone Telephone Start Kit Installation Guide*, available from Symbol.

6 On the Nortel NVPA Download screen, click on **Download.BIN to the phone**.

The firmware download begins. When the process completes, the display indicates that the `File Transfer OK`.

7 When the firmware is successfully downloaded, you can download the Nortel NVPA configuration to the handset. Refer to the next section.

Downloading configurations to the handset

Ensure the correct firmware is in the handset before you attempt to download the Nortel NVPA configuration.

Setting up the handset

If your handset is still attached to your computer with the serial cable, skip these steps, and go to the next section:

1 Turn the handset off. (Press and hold .)

2 Attach the serial cable from your computer to the handset.

3 Turn the handset back on.

Downloading the handset configuration through the serial cable

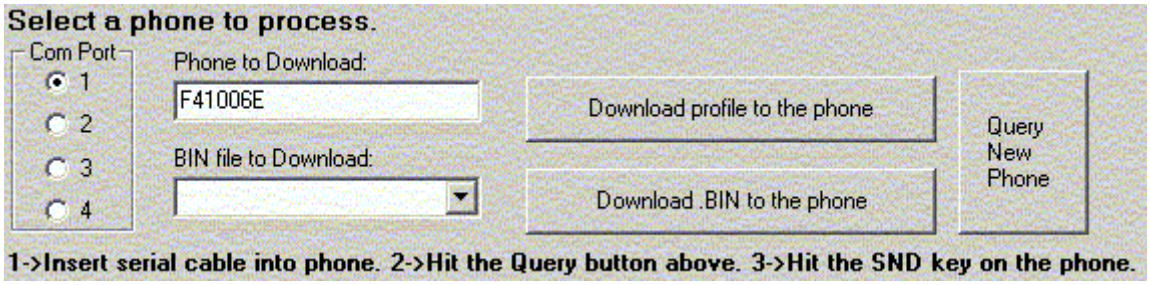
When you have your computer and handset correctly hooked up, you are ready to download the configuration.

1. Open the Nortel NVPA application and click the **Download** tab.

2. At the bottom of the screen, under **Phone to Download**, select the handset to which your computer is attached or click the **Query New Phone** button to select it.

3. On the Nortel NVPA Download screen, click **Download profile to the phone**. Refer to the following figure.

Figure 11 Downloading the configuration to a handset



4. Press the key on the handset.

   The application downloads the configuration file to the handset. The message line on the Nortel NVPA screen indicates the status of the process. When the download is complete, the handset connects to the Business Communications Manager, and prompts you to enter the password (PIN).

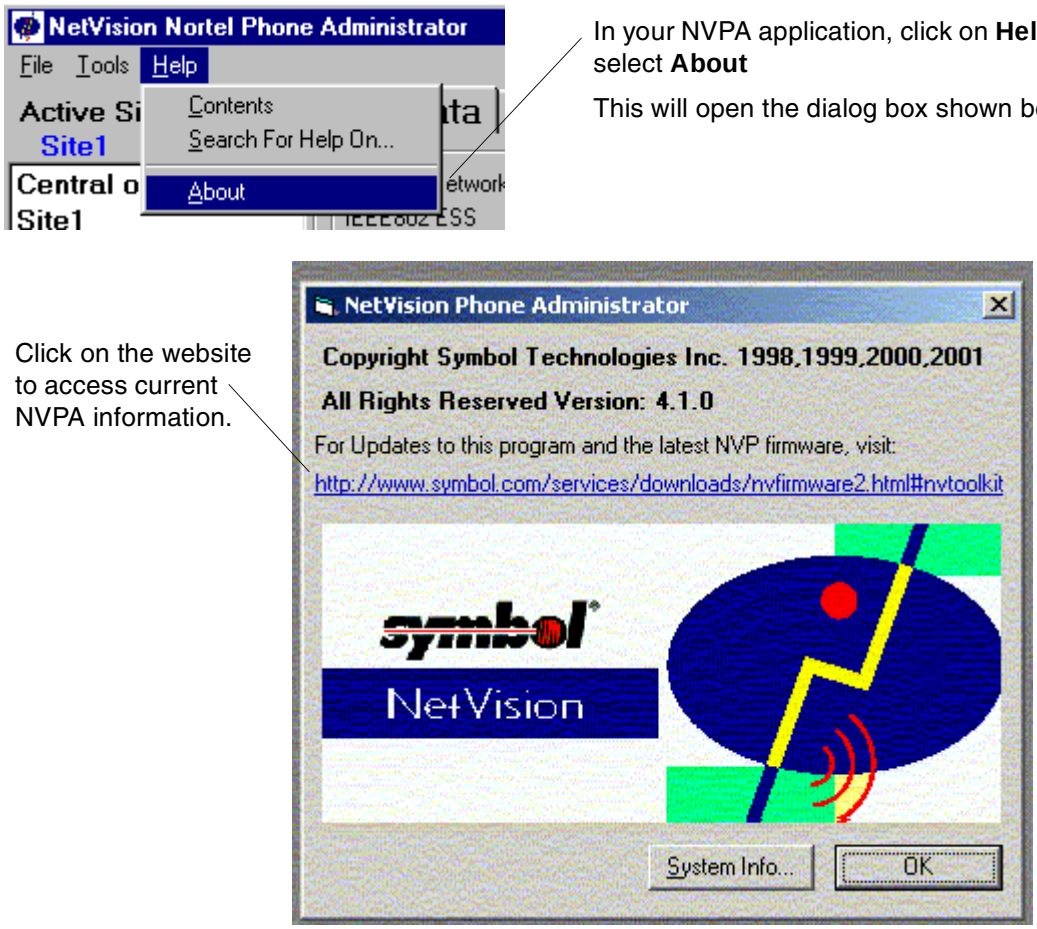
5. Enter the PIN and allow the telephone to connect.

   If you get an error message, you may be out of range of the access point. Move closer and try again. If you still cannot connect, check all the settings in both the Nortel NVPA tool and the Unified Manager H.323 Terminals record.

Checking or updating your NVPA software version

If you are not sure if you have the latest NVPA application, you can go to the Symbol website given in "Gathering system information before you start" on page 8 or you can look under the Help menu item in your application, if it is version 1.2.0 or greater. Refer to the following figure.

Figure 12 Checking NVPA version



Note: If you upgrade your version of NVPA, remember to uninstall the existing version on your computer before you install the new version.

Appendix A
Configuring feature codes for NetVision

This appendix describes how Business Communications Manager features can be programmed onto the NetVision handset feature display menu by changing the FtrBCM.txt file that the NetVision Phone Administrator (NVPA) uses to populate the Features tab. The application comes with a default set of features. This process is only necessary if you want to delete existing features from the default list and add new ones. The list contains a maximum of 10 features.

- The first part of this chapter describes the two different types of features and how they are used.
- The second section, "NetVision Features tab configuration" on page 23, describes how to change the FtrBCM.txt file and update it to your NVPA application.

NetVision menu feature types

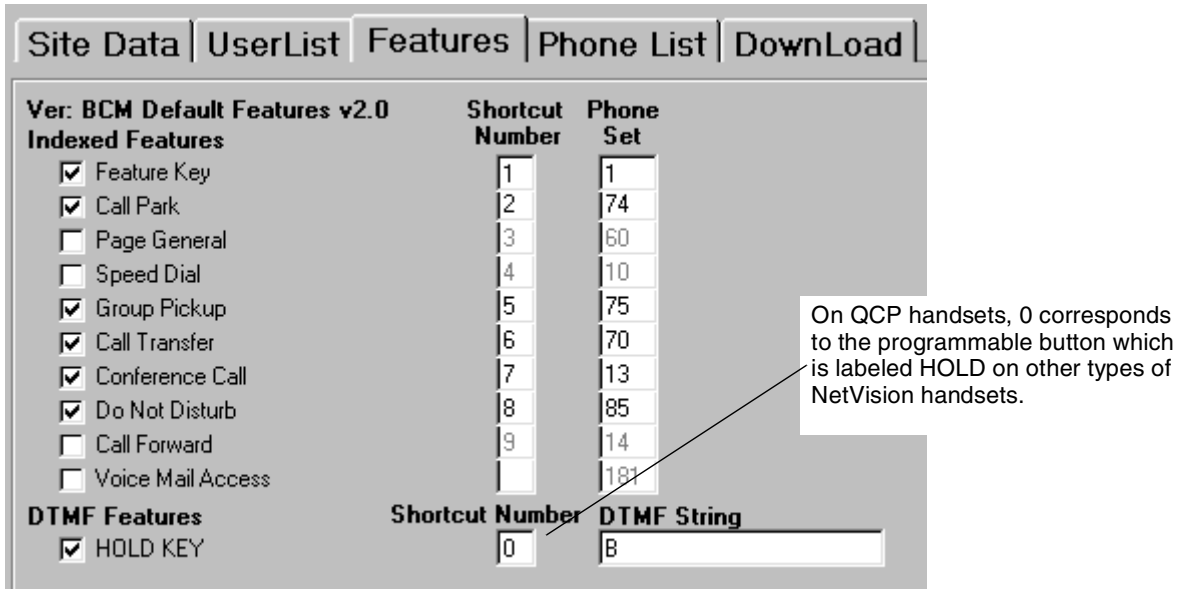
The Nortel NVPA use two types of features: Indexed features and DTMF features.

Indexed features

Indexed features are predefined within the Business Communications Manager in a master list numbered from 0 to 255.

For the Nortel NVPA, the index code for each selected feature is entered into the **Phone Set** fields. Refer to Figure 13.

Figure 13 NVPA Feature screen



When the feature is activated on the handset, the index number is sent to the Business Communication Manager, where the system interprets the number as the requested feature.

Supported features

Table 1 lists the index codes and DTMF strings for the Business Communications Manager features that are supported on the NetVision handset. The NetVision handset FCT menu supports a maximum of 10 features.

- The Nortel NVPA stores the list of features for the FCT menu in FtrBCM.txt. You can use the values on this table to change that list. Refer to "Determining values for the FtrBCM.txt file" on page 24.

Table 1 Indexed features, supported

Feature Name	Type	Index #	Feature code	Description
FEATURE Key	1	1	F (Indexed features) DTMF features: A (during call) or * (initiated call string)	
Call Center Agent login	0	104	904	Login and receive calls as a Call Center agent.
Call Center Agent Make Busy	0	108	908	Temporarily stop receiving calls from the Call Center system.
Call Forward	1	14	4	Send calls to another telephone in your system. Hunt Group calls override all Call Forward features. A Hunt Group extension can be a Call Forward destination. Implemented as a toggle feature for NetVision telephones. User can also press #4 to cancel the feature.
Call Park	1	74	74	Allows user to park a call on the system by assigning it a Call Park Code. The call can be retrieved at any other telephone by entering the Call Park code.
Call Pickup - Directed	1	76	76	Answer any ringing telephone.
Call Pickup - Group	1	75	75	Answer a call ringing on another telephone within the same pickup group
Class of Service	1	68	68	Access the system from a remote location, or use to change dialing filters on the line.
Conference Call	1	13	3	Set up 3-way conversation.
DN Query	0	20	*0	Query the directory number of the telephone.
Do Not Disturb	0	85	85	Prevent calls from coming in to the handset. (toggle feature)
Hold/Unhold call	1	99	B	Hold or unhold a call. Use to retrieve call if END used and the link is dropped.
Language - English	0	131	*501	Pick language display for Business Communications Manager prompts. Note: Handset-generated prompts are English-only.
Language - French	0	132	*502	
Language - Spanish	0	133	*503	
Last # Redial	1	15	5	Redial the last external number you dialed.

Table 1 Indexed features, supported (Continued)

Feature Name	Type	Index #	Feature code	Description
Line Pool	1	64	64	Enter line pool access code to dial through Business Communications Manager line pool.
Link	1	71	71	Host signaling code
Message - Cancel	1	31	#1	Send and receive messages from other system devices.
Messages - Send	1	11	1	
Messages - View	1	65	65	
Off-hook	1	98	~	provides dial tone or answers a ringing call after pressing END or powering on, or taking a conference call off hold if the handset is the master.
Page	1	60	60	Send Page announcements to specific groups. Note: The NetVision handset cannot receive page announcements.
Page - Combined	1	63	63	
Page - External	1	62	62	
Page - Internal	1	61	61	
Priority Call	1	69	69	Transmit priority call to another telephone in the system. Note: Handset cannot receive Priority calls.
Privacy			83	Change privacy setting for an external line assigned to the handset.
Speed dial - Make	1	10	0	Use system speed dial codes.
System Wide Call Appearances	1	221 to 236 220 237 238	*521 to *536 *520 *537 *538	Answer calls or put calls on Hold by selecting the SWCA feature. Find an available SWCA key to park a call. Find the oldest SWCA call. Find the newest SWCA call.
Time	0	103	803	Briefly displays the date and time when on a call, or when feature status message is on the display of an idle telephone.
Transfer	1	70	70	Transfer calls to another telephone, either inside or outside the system. Press #70 on handset to cancel feature.
Trunk Answer	1	100	800	Answer an external call that is ringing on a line in a Ringing Service schedule from any telephone in the system. Note: Does not work for a private line.
Voice Call - make	1	66	66	Make a voice call to another telephone. Note: NetVision receives voice calls as a ringing call.
VM leave msg	1	180	980	Provides all voice mail functions that are available to the system.
VM access	1	181	981	
VM Spare	1	182	982	
VM Spare	1	183	983	
VM Call Fwd	0	184	984	

Table 1 Indexed features, supported (Continued)

Feature Name	Type	Index #	Feature code	Description
VM DN query	0	185	985	
VM Transfer	1	186	986	
VM intercept	1	187	987	
VM Directory	1	188	988	
VM Call Record	1	189	989	

DTMF features

Most Business Communications Manager features are available as Index features. However, the DTMF capability allows for additional features and special programming, such as combining a code to initiate a call, and then sending a feature request. These codes are entered in the **DTMF string** field on the NVPA Features screen.

DTMF features act in the same way that memory buttons do. As well, they can be configured to be used on an idle line or during a call. When the feature is activated on an idle line, a call is initiated, and then the feature sequence is sent to the Business Communications Manager. When the feature is activated during an active call, the feature sequence is sent directly to the Business Communications Manager and relates to the current call. In either case, the Business Communications Manager processes the feature sequence as if the user had pressed the handset keys to activate a feature.

Special characters used in the digit string define how the telephone interprets the string. Refer to Table 2.

Table 2 Digit string special dialing characters

{}	initiates a call on an idle line (brackets enclose call coding) If a feature with this code is entered during a call, these are ignored, and the feature is sent for the current call.
	The system interprets these characters as activating the Feature call, which is equivalent to pressing the Feature button on other system telephones.
*	used to start features that initiate calls, when there is no current active call. Example: {*4}
A	used to start features during calls already in progress. Example: A71.
B	use to activate Hold for an active call
#	• when connected to an analog line, enables DTMF (tones) dialing. This allows someone using a pulse mode analog line to connect to a far end device, then turn on tones to control the device. • immediately after the feature call to turn off a feature: FCT /£°?
!	inserts a flash-hook signal (analog lines)
,	inserts a one-half-second pause

Table 2 Digit string special dialing characters (Continued)

$	inserts the DN of the current logged-on user
]	acts as an key

Examples of DTMF code configurations

- **Initiating a call:** If the feature code you enter is expressed as {*<feature code>}, the system will initiate a call and then send the characters entered in <feature code>. The Business Communications Manager interprets the * at the front of the feature code string as the feature activation code when the * is the first digit of a new call.
  The *<feature code> string can include any of these characters: 0 to 9, # and *.

  Examples:
  {221} initiates a call to extension 221.
  {*4} initiates a call, then sends the feature code 4 (Call Forward) to the Business Communications Manager. The user then enters the DN where the call is to be forwarded.

  When the call is complete, the user presses on the handset.

- **Initiating features while on a call:** If the code you enter for the feature is expressed as A<feature code>, the system interprets this as a feature that is activated during a call. The Business Communications Manager interprets the A as the Feature key. The <feature code> string can include these characters: 0 to 9, #, *, A, B, C, D, and !.

  Examples:
  A74 activates the Call Park feature during an active call.
  A71, when invoked during a call, signals the Business Communications Manager to send a Link/Flash during a call.

- **Combining the features**:

  {*4221}] initiates a call and invokes Call Forward, then automatically dials 221. The square bracket automatically ends the call.

NetVision Features tab configuration

The Features tab on the Nortel NVPA tool defines the contents of the NetVision handset display menu that appears when the user presses or on the handset. The NVPA comes with a default set of features.

Nortel NVPA uses the **Gateway Type** setting, on the Site Data tab, to determine which set of default configuration files to use. When the **Gateway Type** is set to **BCM**, Nortel NVPA uses FtrBCM.txt to build the Features Tab feature list.

To change the contents of the Features tab, you can edit FtrBCM.txt.

The FtrBCM.txt file specifies the feature type, feature description, and feature label. The file does not specify the feature index or DTMF digits, nor does it specify the shortcut number, which means you need to enter this information on the Feature tab after you invoke this file.

Finding the correct Feature list

When a new site is created, **Gateway Type**, on the Site Data tab, is set to Meridian-1 by default. Therefore, the feature list will populate from FtrMer1C.txt.

Use these steps to change a site to refer to a Business Communications Manager:

1. Change the value in **Gateway Type** to **BCM**.
2. Select **Tools**, **Import Features**.

   This will cause the feature list to be reloaded from FtrBCM.txt.
3. Click on the Features tab and enter the values for, **Shortcut number**, **Phone Set** and **DTMF digits**.

Determining values for the FtrBCM.txt file

If you want to change the default feature list, you can edit the FtrBCM.txt file. The structure of the FtrBCM.txt file, and how to edit it, are described below.

Table 1 on page 20 provides the settings for each supported feature.

The FtrBCM.txt file has a simple format which defines one feature per line, a version line, and a syntax for defining lines as comments. Refer to Figure 14 on page 26 and Table 3.

Table 3 FtrBCM.txt values and descriptions

Feature definition syntax: **`"Feature description","Feature label",type;`**

Command	Values	Description
“Feature description”	“<name of feature>”	32-character string that displays on the Feature tab
“Feature label”	“<name of feature>”	10-character string that displays on the NetVision phone handset <FCT> menu. (NetVision telephone display is 10 chars by two lines.)

Table 3 FtrBCM.txt values and descriptions (Continued)

type	0, 1 or 2	• 0 — feature can be invoked while telephone is idle or on a call. The feature does not start a call.
		• 1 — an indexed feature that initiates a call prior to sending the feature index. Additional user input via the keypad can only be transmitted to the Business Communications Manager while the phone is “off hook”. Users manually release the call when the activity is completed. If the feature is selected during a call, the index is sent in the context of the current call. Some features, such as Voice Call, require the phone to go off hook before being activated. Features that requires additional data entry, such as Call Forward, must also initiate a call. Also refer to “Indexed features” on page 19.
		• 2 — DTMF feature, or memory dialer. Memory dialers have a special syntax to specify whether or not to make a call and special characters to identify the digits as a feature code as well as other special functions. Refer to “DTMF features” on page 22.
Example: Adding Call Forward All Calls: `“Call Forward All Calls”,”Frwd All”,1;`		
• The first two parameters of the feature line are enclosed in quotes. • The last parameter is a single digit - 0, 1 or 2 - which specifies the type of feature. • Each line is terminated with a semicolon. • No leading spaces are allowed, nor are spaces allowed between parameters. Spaces are allowed in the feature description and feature label, since they are enclosed in quotes.		

Figure 14 FtrBCM.txt file layout

```
// this is a comment line
// The version line appears on the Features tab in NVPA.
// It must start with #BCM but is otherwise not formatted.
// The next line is the version line:
#BCM Default Features v0.00
// The next line defines the syntax for a feature definition:
//"Feature description","Feature label",type;
//"Feature key", "FEATURE",1;
"Feature Key","FEATURE",1;
"Call Transfer","Transfer",0;
"Conference Call","Conference",0;
"Call Park","Park",0;
"Do Not Disturb","DND",0;
"Call Forward All Calls","Call Fwd",1;
"Page","Page",2;
"Voice Mail","Voice Mail",2;
"System Speed Dial","Speed Dial",2;
```

Editing the FtrBCM.txt file

Follow these steps to edit the file.

1. Access `FtrBCM.txt` on the computer where you installed Nortel NVPA.
2. Add, change, or delete the feature information in the file. Refer to "Determining values for the FtrBCM.txt file" on page 24.
3. Save the file.
4. Open the Nortel NVPA and update the feature list for the site(s). Refer to "Finding the correct Feature list" on page 24.
5. Under **Tools**, select **Import Features**.

New or changed entries will not be selected and will have no **Shortcut** number, **Phone Set** value or **DTMF string**.

Customizing features for users

If you want different feature lists for different types of users:

1. Define a new site for each type of user.
2. Create a version of the FtrBCM.txt file for each new site (user type). Refer to "Editing the FtrBCM.txt file" on page 26.
3. Create a new site.
4. Copy the appropriate version to FtrBCM.txt
5. Follow the steps in "Finding the correct Feature list" on page 24.
6. Go to the **Features** tab and populate the fields for the desired features.
7. Enter new users on the site.

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